

Remarks

This is a divisional application of Application No. 10/059,440 filed January 31, 2002 (the “‘440 Application”).

Claims 1-9 and 15-18 are pending, with Claim 1 being independent. Claims 10-14 have been cancelled without prejudice. Claims 1 and 3-9 have been amended and Claims 15-18 have been added herein. Support for Claims 15-18 can be found at least at Figs. 3 and 5 and the description thereof in the specification.

The specification and Abstract have been amended to include amendments made in the ‘440 Application. It is respectfully submitted that no new matter has been added.

In the Office Action dated March 31, 2003, in the ‘440 Application, Claims 1-5 and 8-10 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,053,790 (Stephenson et al.) in view of European Patent Application No. 0 642 925 (Schantz). The pending claims are believed to be allowable over these citations for the reasons discussed below.

As recited in independent Claim 1, the present invention relates to a printing apparatus which performs printing by scanning a carriage unit, capable of holding a printhead, over a print medium based on information transmitted by an external apparatus. The voltage control unit for controlling the printhead includes reception means and voltage generation means. The reception means receives an information signal transmitted from the printhead. The voltage generation means generates a voltage which is adjusted to drive

the printhead based on the information signal received by the reception means. The voltage control unit is provided on the carriage unit.

With the above arrangement, it is possible to adjust the voltage with a high response at the carriage according to the information signal outputted from the printhead. Accordingly, even if the information signal, which can change at every moment, is sent from the printhead, excellent response in controlling the voltage can be realized.

Stephenson et al. relates to a thermal printhead in which a voltage coupled to the printhead is adjusted responsive to the sensed number of selected heat elements to maintain a constant predetermined voltage across the selected heat elements independent of the number of selected heat elements. However, Applicants submit that in Stephenson et al. the regulation of the voltage is not performed at the carriage, but is controlled by a unit which is separate from the printhead 26. Note Fig. 5 and the discussion at col. 10, lines 16-19.

Thus, Stephenson et al. fails to disclose or suggest at least the feature of the voltage control unit being provided on a carriage unit, as is recited in independent Claim 1.

Schantz relates to a printer having a printhead that includes power-conditioning circuitry. As understood by Applicants, this power-conditioning circuitry stabilizes an unstable voltage outputted from a battery and outputs a stabilized voltage. Note col. 3, lines 39-47. Schantz does not generate a voltage adjusted for firing nozzles. Accordingly, one of ordinary skill in the art would not be motivated to include the voltage compensator in Stephenson et al. on a carriage or printhead based on the teachings of Schantz.

Thus, independent Claim 1 is patentable over the citations of record, whether taken individually or in combination.

Dependent Claims 2-9 and 15-18 are also allowable, in their own right, for defining features of the present invention in addition to those recited in their respective independent claims. Individual consideration of the dependent claims is requested.

Early and favorable consideration hereof is earnestly solicited.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

  
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